



## SEQUENCE LISTING

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TECH CENTER 1600/2900

<110> Hoechst Schering AgrEvo GmbH  
LÖRZ, Horst  
LÜTTICKE, Stephanie  
ABEL, Gernot  
GENSCHEL, Ulrich

<120> NUCLEIC ACID MOLECULES WHICH CODE FOR ENZYMES DERIVED FROM WHEAT AND  
WHICH ARE INVOLVED IN THE SYNTHESIS OF STARCH

<130> 514413-3849.1

<150> WO 99/58690

<151> 1999-11-18

<150> DE 198 20 608.9

<151> 1998-05-08

<150> 09/674,817

<151> 2000-11-06

<160> 11

<170> PatentIn version 3.1

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<213> Triticum aestivum L. cv.Florida

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Ala Gly Lys Gly Val Gly Glu Val Cys Ala Ala Val Val Glu Ala Ala  
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Tyr Val Asn Tyr Phe Arg Trp Asp Lys Lys Glu Gln Tyr Ser Glu Leu	
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cac cga ttc tgc tgc ctc atg acc aaa ttc cgc aag gag tgc gag ggt	2561
His Arg Phe Cys Cys Leu Met Thr Lys Phe Arg Lys Glu Cys Glu Gly	
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ctt ggc ctt gag gac ttt cca acg gcc aaa cgg ctg cag tgg cat ggt	2609
Leu Gly Leu Glu Asp Phe Pro Thr Ala Lys Arg Leu Gln Trp His Gly	
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His Gln Pro Gly Lys Pro Asp Trp Ser Glu Asn Ser Arg Phe Val Ala	
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Phe Ser Met Lys Asp Glu Arg Gln Gly Glu Ile Tyr Val Ala Phe Asn	
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acc agc cac tta ccg gcc gtt gtt gag ctc cca gag cgc gca ggg cgc	2753
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Arg Trp Glu Pro Val Val Asp Thr Gly Lys Pro Ala Pro Tyr Asp Phe	
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Leu Thr Asp Asp Leu Pro Asp Arg Ala Leu Thr Ile His Gln Phe Ser	
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His Phe Leu Tyr Ser Asn Leu Tyr Pro Met Leu Ser Tyr Ser Ser Val	
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<212> PRT

<213> Triticum aestivum L. cv.Florida

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Lys Val Glu Asp Glu Gly Glu Glu Asp Glu Pro Val Ala Glu Asp Arg  
35 40 45

Tyr Ala Leu Gly Gly Ala Cys Arg Val Leu Ala Gly Met Pro Ala Pro  
 50 55 60

Leu Gly Ala Thr Ala Leu Ala Gly Gly Val Asn Phe Ala Val Tyr Ser  
 65 70 75 80

Gly Gly Ala Thr Ala Ala Ala Leu Cys Leu Phe Thr Pro Glu Asp Leu  
 85 90 95

Lys Ala Asp Arg Val Thr Glu Glu Val Pro Leu Asp Pro Leu Met Asn  
 100 105 110

Arg Thr Gly Asn Val Trp His Val Phe Ile Glu Gly Glu Leu His Asn  
 115 120 125

Met Leu Tyr Gly Tyr Arg Phe Asp Gly Thr Phe Ala Pro His Cys Gly  
 130 135 140

His Tyr Leu Asp Val Ser Asn Val Val Val Asp Pro Tyr Ala Lys Ala  
 145 150 155 160

Val Ile Ser Arg Gly Glu Tyr Gly Val Pro Ala Arg Gly Asn Asn Cys  
 165 170 175

Trp Pro Gln Met Ala Gly Met Ile Pro Leu Pro Tyr Ser Thr Phe Asp  
 180 185 190

Trp Glu Gly Asp Leu Pro Leu Arg Tyr Pro Gln Lys Asp Leu Val Ile  
 195 200 205

Tyr Glu Met His Leu Arg Gly Phe Thr Lys His Asp Ser Ser Asn Val  
 210 215 220

Glu His Pro Gly Thr Phe Ile Gly Ala Val Ser Lys Leu Asp Tyr Leu  
 225 230 235 240

Lys Glu Leu Gly Val Asn Cys Ile Glu Leu Met Pro Cys His Glu Phe  
 245 250 255

Asn Glu Leu Glu Tyr Ser Thr Ser Ser Ser Lys Met Asn Phe Trp Gly  
 260 265 270

Tyr Ser Thr Ile Asn Phe Phe Ser Pro Met Thr Arg Tyr Thr Ser Gly

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15 20 25

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Ala Thr Lys Ala Glu Asp Glu Gly Glu Glu Asp Glu Pro Val Ala Glu  
30 35 40

gac agg tac gcg ctc ggc ggc gcg tgc agg gtg ctc gcc gga atg ccc 195  
Asp Arg Tyr Ala Leu Gly Gly Ala Cys Arg Val Leu Ala Gly Met Pro  
45 50 55 60

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Thr Pro Leu Gly Ala Thr Ala Leu Ala Gly Gly Val Asn Phe Ala Val

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gat	ctc	aag	gcg	gat	agg	gtg	acg	gag	gag	gtt	ccc	ctt	gac	ccc	ctg	339				
Asp	Leu	Lys	Ala	Asp	Arg	Val	Thr	Glu	Glu	Val	Pro	Leu	Asp	Pro	Leu					
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atg	aat	cgg	act	ggg	aac	gta	tgg	cat	gtc	ttc	atc	gaa	ggc	gag	ctg	387				
Met	Asn	Arg	Thr	Gly	Asn	Val	Trp	His	Val	Phe	Ile	Glu	Gly	Glu	Leu					
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cag	gac	atg	ctt	tac	ggg	tac	agg	ttc	gac	ggc	acc	ttt	gct	cct	cac	435				
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Cys	Gly	His	Tyr	Leu	Asp	Val	Ser	Asn	Val	Val	Val	Asp	Pro	Tyr	Ala					
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Val	Ile	Tyr	Glu	Met	His	Leu	Arg	Gly	Phe	Thr	Lys	His	Asp	Ser	Ser					
205					210					215					220					
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Ser	Gly	Gly	Ile	Lys	Asn	Cys	Gly	Arg	Asp	Ala	Ile	Asn	Glu	Phe	Lys					
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Thr Phe Val Arg Glu Ala His Lys Arg Gly Ile Glu Val Ile Leu Asp	
305 310 315	
ggt gtc ttc aac cat aca gct gag ggt aat gag aat ggt cca ata tta	1011
Val Val Phe Asn His Thr Ala Glu Gly Asn Glu Asn Gly Pro Ile Leu	
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Thr Arg Gly Ser Ser Leu Trp Asp Pro Val Asn Val Tyr Gly Ala Pro	
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Val Arg Gln Phe Ile Lys Gly Thr Asp Gly Phe Ala Gly Gly Phe Ala	
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Glu Cys Leu Cys Gly Ser Pro His Leu Tyr Gln Ala Gly Gly Arg Lys	
495 500 505	
cct tgg cac agt atc aac ttt gta tgt gca cac gat gga ttt aca ctg	1587
Pro Trp His Ser Ile Asn Phe Val Cys Ala His Asp Gly Phe Thr Leu	
510 515 520	



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Asn Asn Arg Asp Gly Glu Asn His Asn Leu Ser Trp Asn Cys Gly Glu	
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670 675 680	
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Pro Ala Pro Tyr Asp Phe Leu Thr Asp Asp Leu Pro Asp Arg Ala Leu	
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Thr Ile His Gln Phe Ser His Phe Leu Asn Ser Asn Leu Tyr Pro Met	
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<212> PRT

<213> Triticum aestivum L. cv.Florida

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Glu Asp Glu Gly Glu Glu Asp Glu Pro Val Ala Glu Asp Arg Tyr Ala  
 35 40 45

Leu Gly Gly Ala Cys Arg Val Leu Ala Gly Met Pro Thr Pro Leu Gly  
 50 55 60

Ala Thr Ala Leu Ala Gly Gly Val Asn Phe Ala Val Tyr Ser Gly Gly  
 65 70 75 80

Ala Thr Ala Ala Ala Leu Cys Leu Phe Thr Pro Glu Asp Leu Lys Ala  
 85 90 95

Asp Arg Val Thr Glu Glu Val Pro Leu Asp Pro Leu Met Asn Arg Thr  
 100 105 110

Gly Asn Val Trp His Val Phe Ile Glu Gly Glu Leu Gln Asp Met Leu  
 115 120 125

Tyr Gly Tyr Arg Phe Asp Gly Thr Phe Ala Pro His Cys Gly His Tyr  
 130 135 140

Leu Asp Val Ser Asn Val Val Val Asp Pro Tyr Ala Lys Ala Val Ile  
 145 150 155 160

Ser Arg Gly Glu Tyr Gly Val Pro Ala Arg Gly Asn Asn Cys Trp Pro  
165 170 175

Gln Met Ala Gly Met Ile Pro Leu Pro Tyr Ser Thr Phe Asp Trp Glu  
180 185 190

Gly Asp Leu Pro Leu Arg Tyr Pro Gln Lys Asp Leu Val Ile Tyr Glu  
195 200 205

Met His Leu Arg Gly Phe Thr Lys His Asp Ser Ser Asn Val Glu His  
210 215 220

Pro Gly Thr Phe Ile Gly Ala Val Ser Lys Leu Asp Tyr Leu Lys Glu  
225 230 235 240

Leu Gly Val Asn Cys Ile Glu Leu Met Pro Cys His Glu Phe Asn Glu  
245 250 255

Leu Glu Tyr Ser Thr Ser Ser Ser Lys Met Asn Phe Trp Gly Tyr Ser  
260 265 270

Thr Ile Asn Phe Phe Ser Pro Met Thr Arg Tyr Thr Ser Gly Gly Ile  
275 280 285

Lys Asn Cys Gly Arg Asp Ala Ile Asn Glu Phe Lys Thr Phe Val Arg  
290 295 300

Glu Ala His Lys Arg Gly Ile Glu Val Ile Leu Asp Val Val Phe Asn  
305 310 315 320

His Thr Ala Glu Gly Asn Glu Asn Gly Pro Ile Leu Ser Phe Arg Gly  
325 330 335

Val Asp Asn Thr Thr Tyr Tyr Met Leu Ala Pro Lys Gly Glu Phe Tyr  
340 345 350

Asn Tyr Ser Gly Cys Gly Asn Thr Phe Asn Cys Asn His Pro Val Val  
355 360 365

Arg Gln Phe Ile Val Asp Cys Leu Arg Tyr Trp Val Thr Glu Met His  
370 375 380

Val Asp Gly Phe Arg Phe Asp Leu Ala Ser Ile Met Thr Arg Gly Ser

385		390		395		400									
Ser	Leu	Trp	Asp	Pro	Val	Asn	Val	Tyr	Gly	Ala	Pro	Ile	Glu	Gly	Asp
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Met	Ile	Thr	Thr	Gly	Thr	Pro	Leu	Val	Thr	Pro	Pro	Leu	Ile	Asp	Met
				420					425					430	
Ile	Ser	Asn	Asp	Pro	Ile	Leu	Gly	Gly	Val	Lys	Leu	Val	Ala	Glu	Ala
		435					440						445		
Trp	Asp	Ala	Gly	Gly	Leu	Tyr	Gln	Val	Gly	Gln	Phe	Pro	His	Trp	Asn
	450					455					460				
Val	Trp	Ser	Glu	Trp	Asn	Gly	Lys	Tyr	Arg	Asp	Ile	Val	Arg	Gln	Phe
465					470					475					480
Ile	Lys	Gly	Thr	Asp	Gly	Phe	Ala	Gly	Gly	Phe	Ala	Glu	Cys	Leu	Cys
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Gly	Ser	Pro	His	Leu	Tyr	Gln	Ala	Gly	Gly	Arg	Lys	Pro	Trp	His	Ser
			500						505				510		
Ile	Asn	Phe	Val	Cys	Ala	His	Asp	Gly	Phe	Thr	Leu	Ala	Asp	Leu	Val
		515					520					525			
Thr	Tyr	Asn	Asn	Lys	Tyr	Asn	Leu	Pro	Asn	Gly	Glu	Asn	Asn	Arg	Asp
	530					535					540				
Gly	Glu	Asn	His	Asn	Leu	Ser	Trp	Asn	Cys	Gly	Glu	Glu	Gly	Glu	Phe
545					550					555					560
Ala	Arg	Leu	Ser	Val	Lys	Arg	Leu	Arg	Lys	Arg	Gln	Met	Arg	Asn	Phe
				565					570					575	
Phe	Val	Cys	Leu	Met	Val	Ser	Gln	Gly	Val	Pro	Met	Phe	Tyr	Met	Gly
			580					585					590		
Asp	Glu	Tyr	Gly	His	Thr	Lys	Gly	Gly	Asn	Asn	Asn	Thr	Tyr	Cys	His
		595					600					605			
Asp	Ser	Tyr	Val	Asn	Tyr	Phe	Arg	Trp	Asp	Lys	Lys	Glu	Gln	Tyr	Ser
	610					615					620				

Asp Leu His Arg Phe Cys Cys Leu Met Thr Lys Phe Arg Lys Glu Cys  
625 630 635 640

Glu Gly Leu Gly Leu Glu Asp Phe Pro Thr Ala Glu Arg Leu Gln Trp  
645 650 655

His Gly His Gln Pro Gly Lys Pro Asp Trp Ser Glu Asn Ser Arg Phe  
660 665 670

Val Ala Phe Ser Met Lys Asp Glu Arg Gln Gly Glu Ile Tyr Val Ala  
675 680 685

Phe Asn Thr Ser His Leu Pro Ala Val Val Glu Leu Pro Glu Arg Thr  
690 695 700

Gly Arg Arg Trp Glu Pro Val Val Asp Thr Gly Lys Pro Ala Pro Tyr  
705 710 715 720

Asp Phe Leu Thr Asp Asp Leu Pro Asp Arg Ala Leu Thr Ile His Gln  
725 730 735

Phe Ser His Phe Leu Asn Ser Asn Leu Tyr Pro Met Leu Ser Tyr Ser  
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Ser Val Ile Leu Val Leu Arg Pro Asp Val  
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